

Fig. 1A

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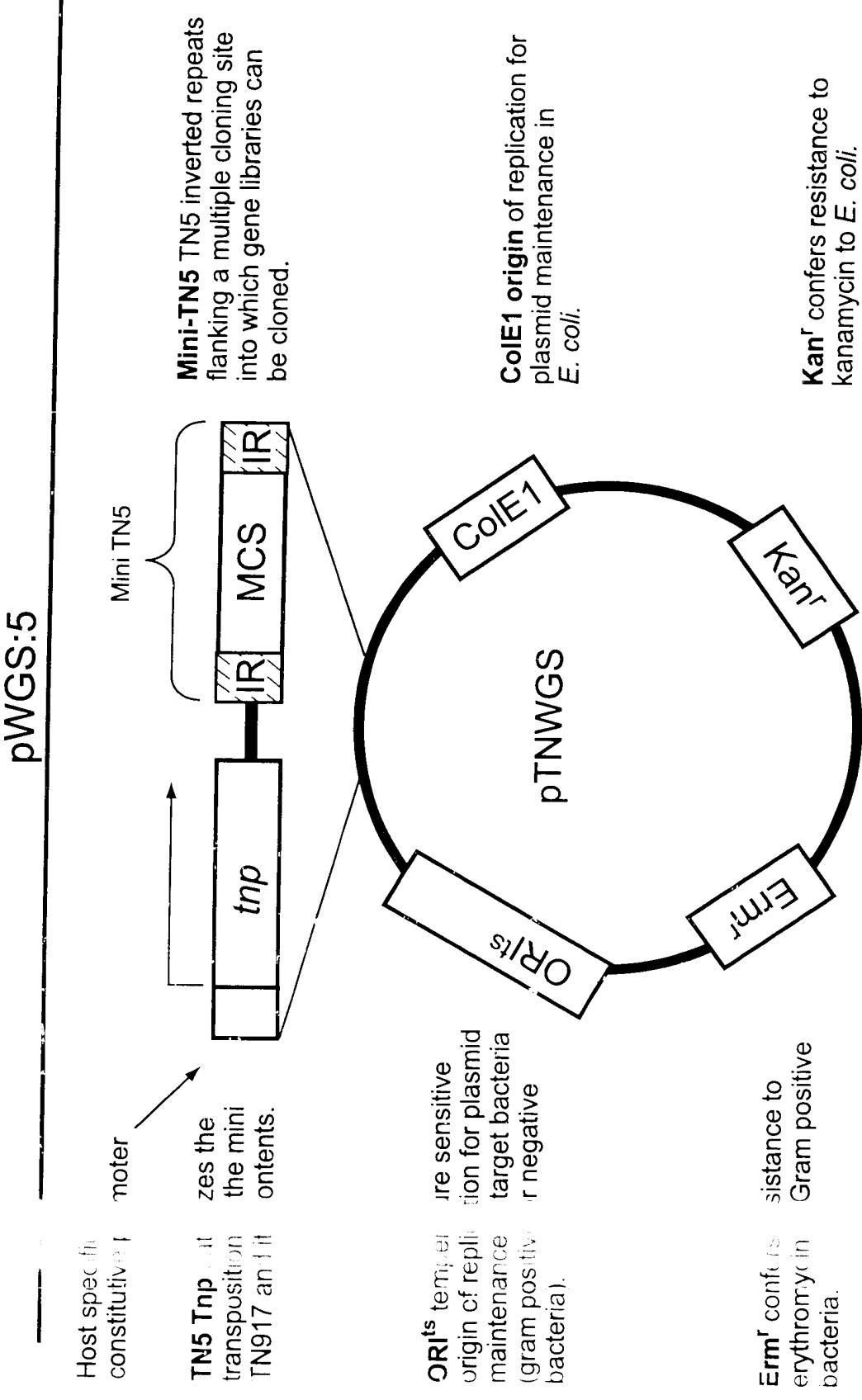


Fig. 1B

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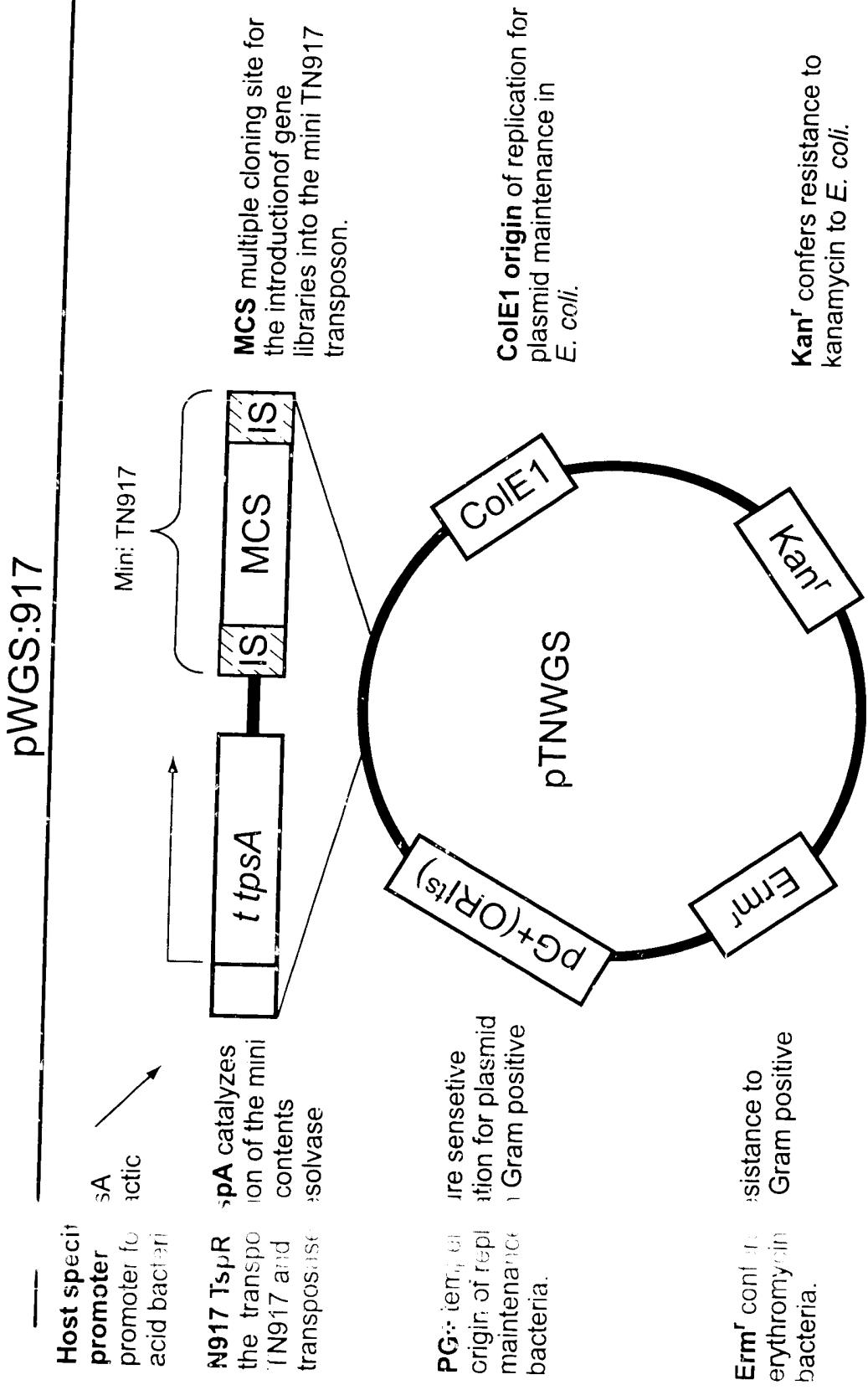


Fig. 1C

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Efficient integration into mammalian
cells using evolved *Mariner* transposons

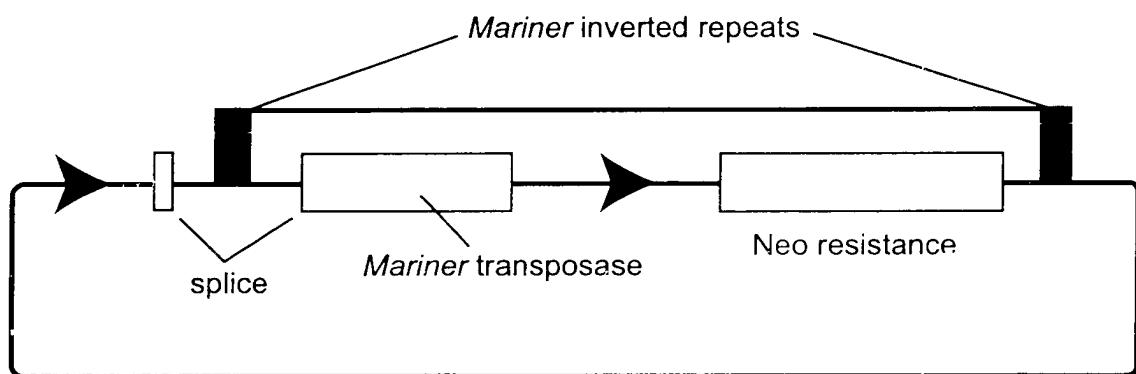


Fig. 2A

Mariner transposons for inserting loxP sites
at loci with desirable expression properties

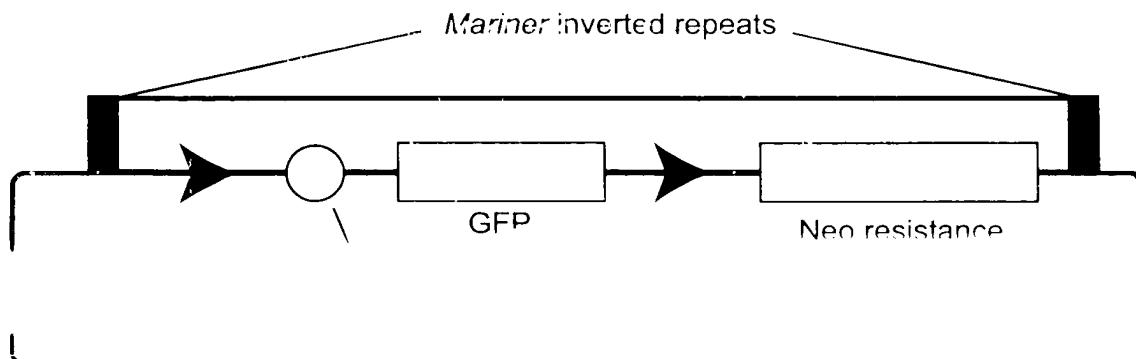


Fig. 2B

Methodology for Isolating Hosts with improved Phenotypes by Whole Genome Shuffling (WGS)

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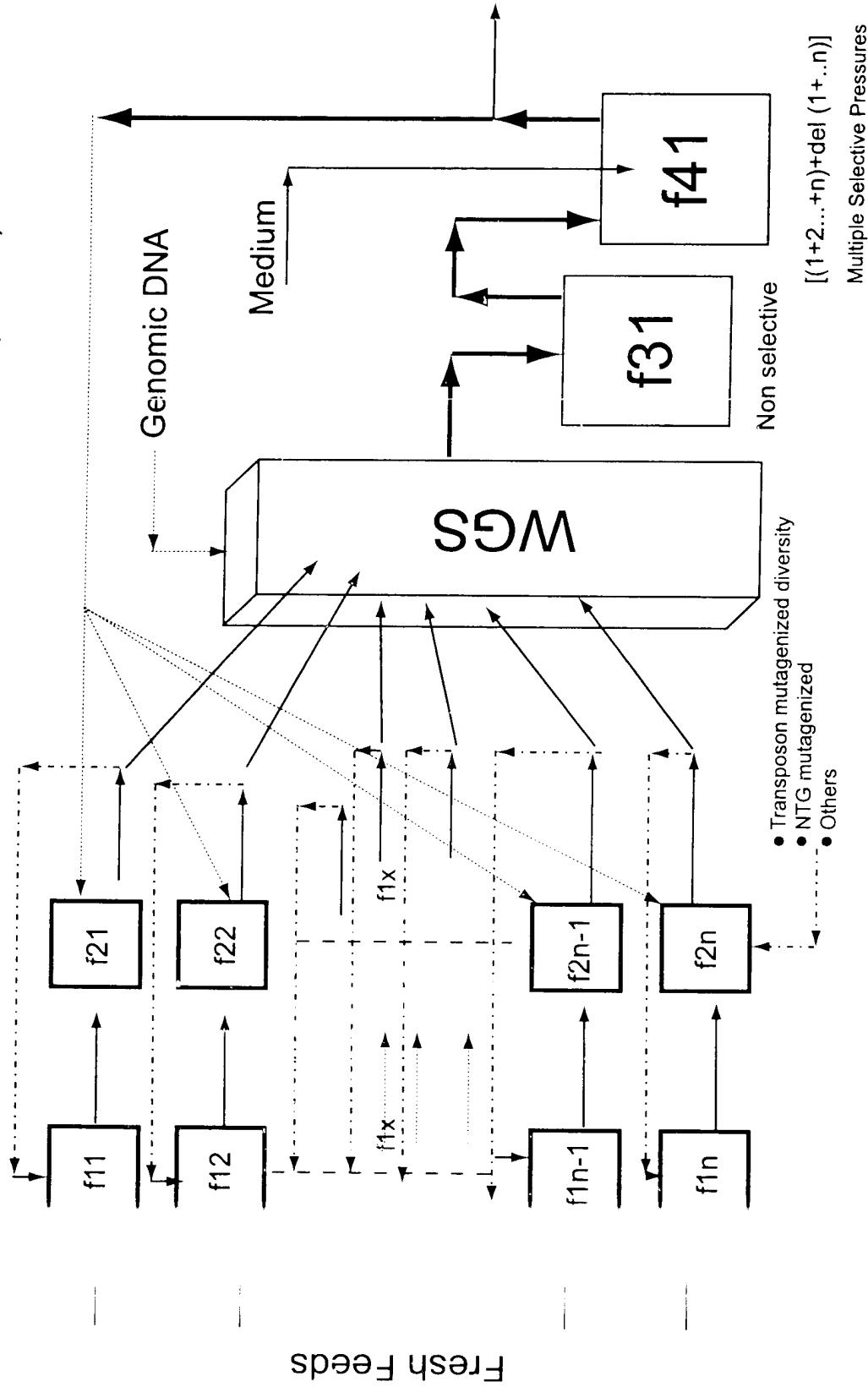
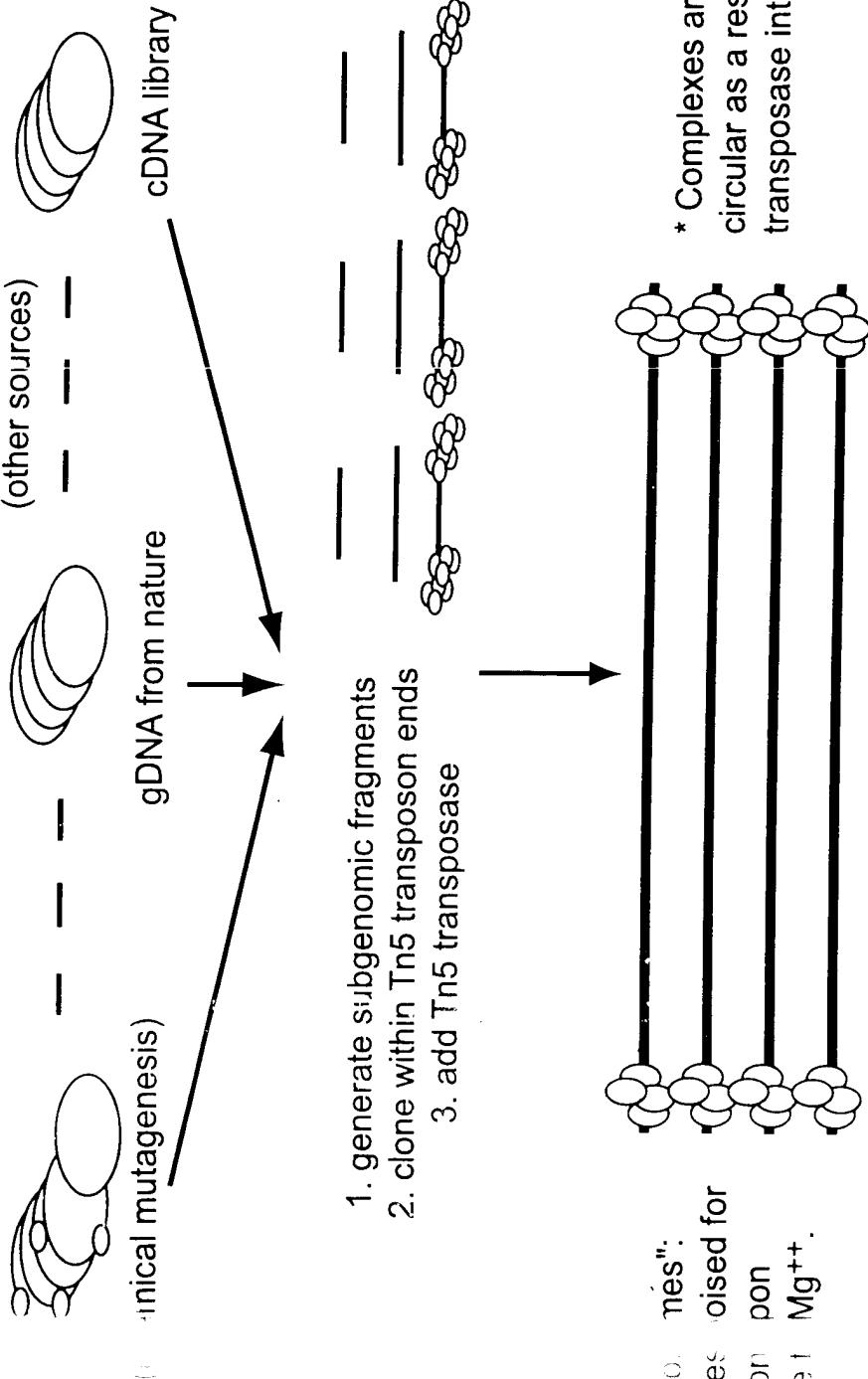


Fig. 3

Shuffling of Genomes *In Vitro*: Formation of transposomes

sources of genomic diversity



* Complexes are actually circular as a result of transposase interaction

Fig. 4A

**Shuffling of Genomes *In Vitro*:
Breeding multiple donor genomes with a single acceptor genome**

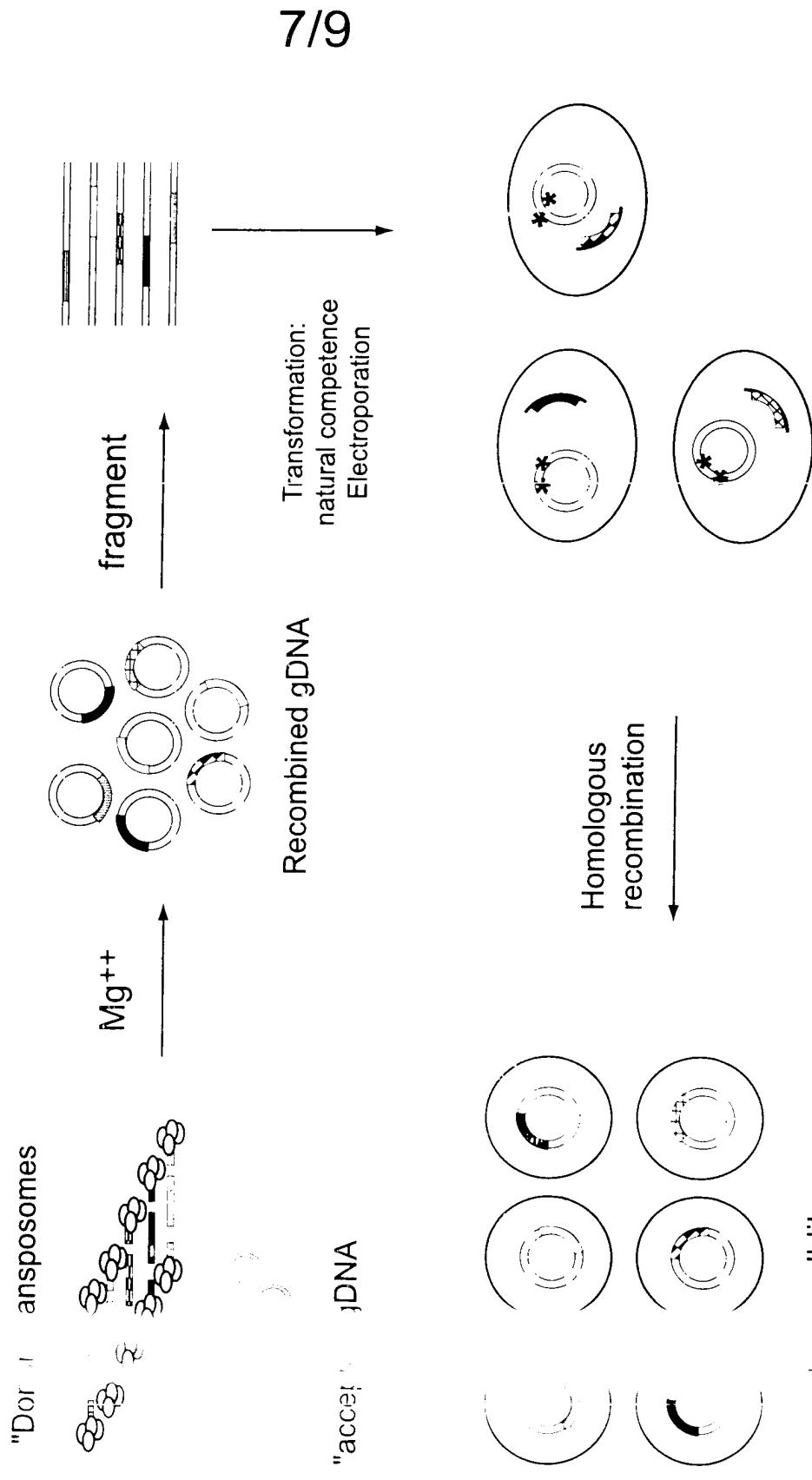


Fig. 4B
whole cell library

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**Shuffling of Genomes *In Vitro*:
Breeding multiple donor genomes with multiple acceptor genome**

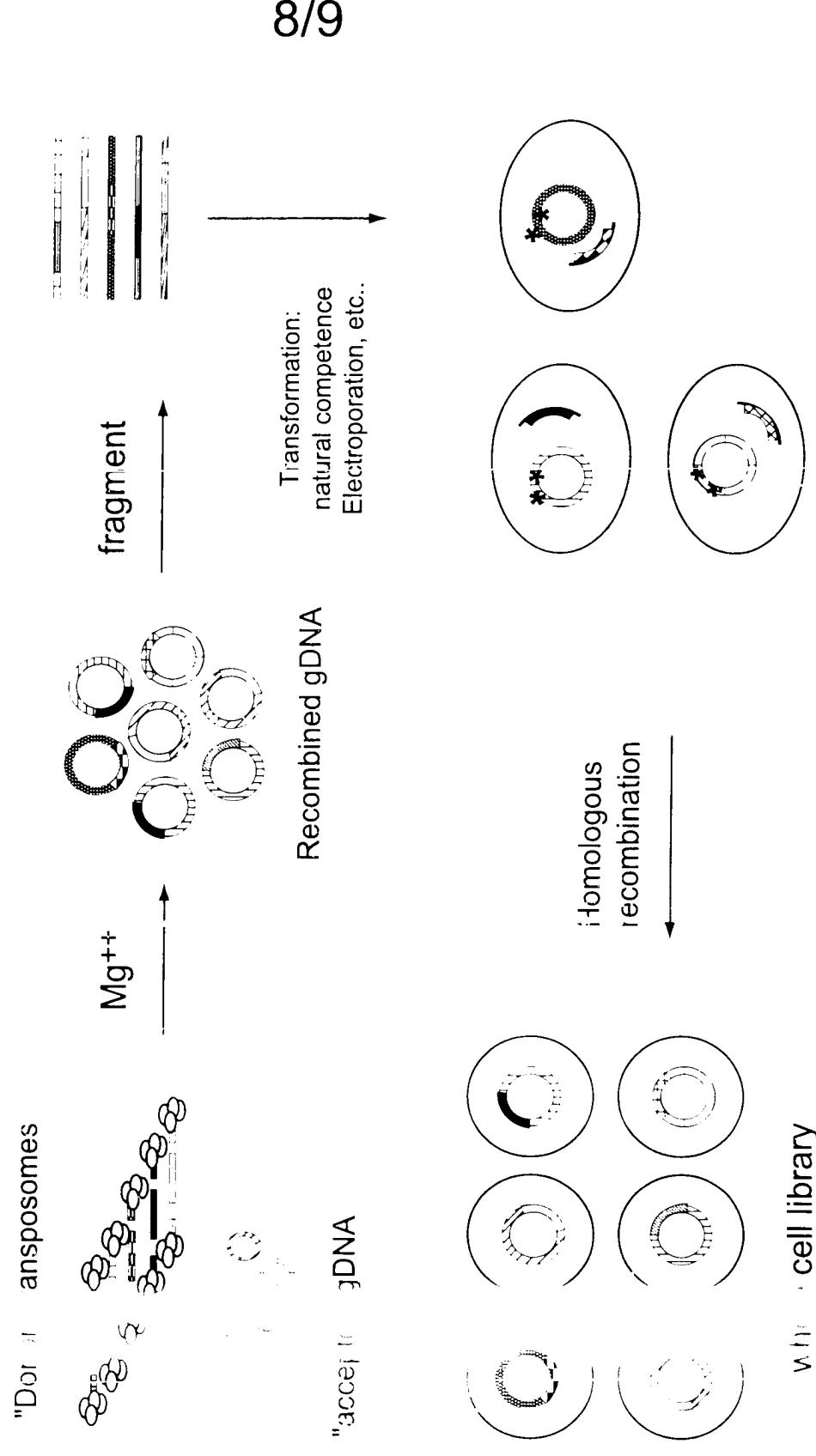


Fig. 4C

with cell library

Shuffling of Genomes *In Vitro*: Split pool recursive in vitro recombination of multiple genomes

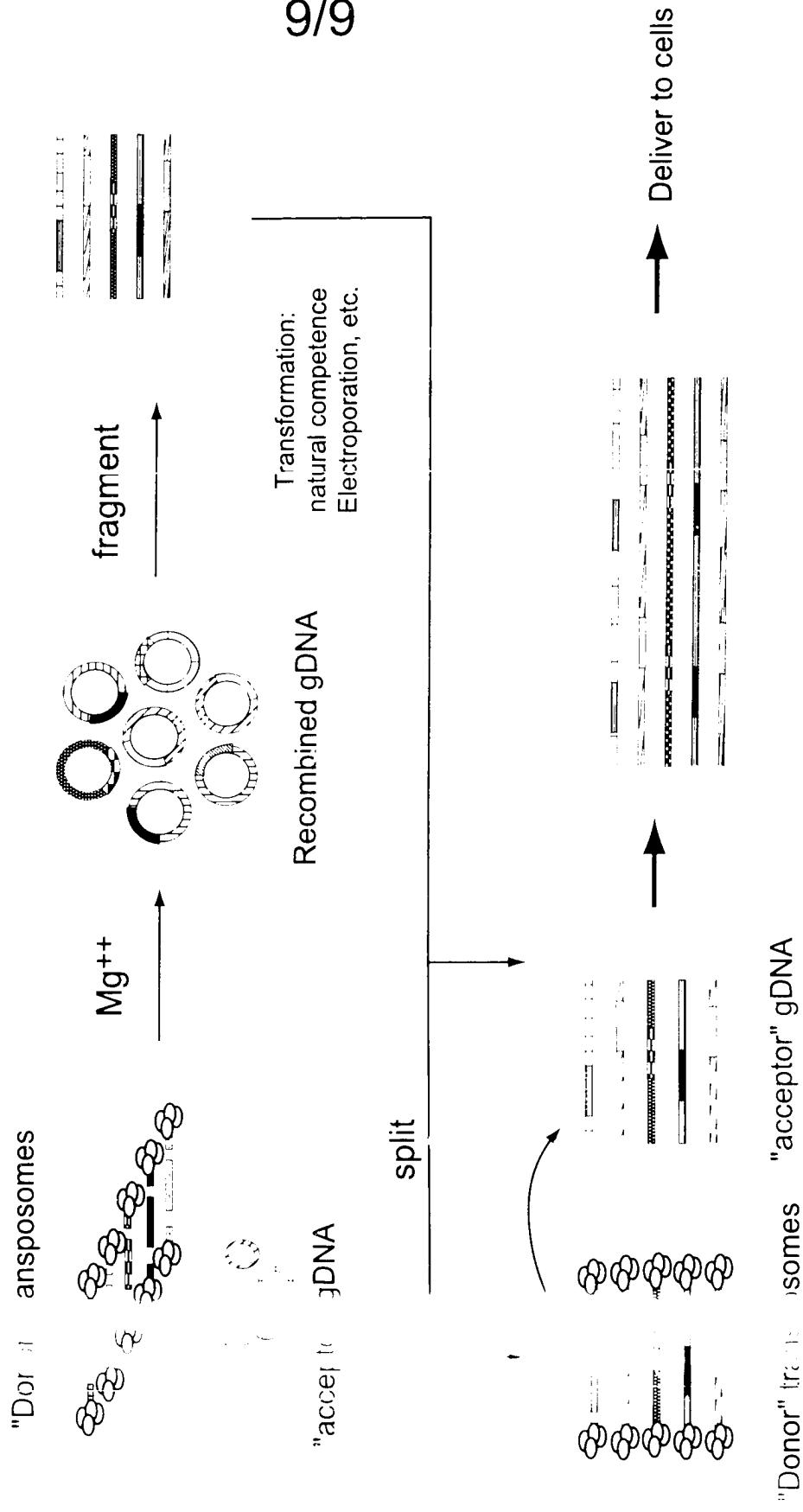


Fig. 4D